

# **Technology Research Ltd.**

## ***Introduction***

Technology Research (West Midlands) Ltd. was set up in 1998 on the technology and science park of Barchester University. The company provides technology research facilities on a contractual basis in specialized areas of chemistry and biotechnology for a variety of organizations. The work is performed under the strictest security. Currently security is enforced using a manual system and unfortunately on several occasions unauthorized access has been gained to the building. A significant increase in business has resulted in a planned extension to the laboratories and offices and it has been decided to install a computer-based access control system.

## ***Secure Areas***

The proposed floor layout of the building is shown in Figure 1. For security purposes there are four distinct areas in the building. Area 1 is the main entrance reception area, which is staffed by a receptionist/typist, and is not a secure area. Area 2 is the office and administrative area. It is accessed via corridor A and is a secure area. Area 3 is accessed via corridor B providing access to the Research Support Area. Area 4 is accessed via corridor C that leads to the secure research areas.

There are four levels of security clearance ranging from no security clearance to Area 4 clearance. Individuals may be permitted access to Area 1 only (no security clearance, an open access area), to Areas 1 and 2 only (Area 2 clearance), to Areas 1, 2 and 3 (Area 3 clearance) or to the whole building (Area 4 clearance). Within each of these areas an individual may have access to office or research areas.

Area 2, 3 or 4 clearance is issued to employees of Technology Research depending upon their work requirements. Entry is only permitted to Area 4 for who have been given a positive security clearance. Visitors are authorized to enter Area 2 after Technology Research has checked their credentials with their employer. Visitors from organisations that collaborate closely with Technology Research may be authorized to enter Area 3, again after appropriate vetting. Any breach of security by staff results in summary dismissal.

## ***Operational Requirements for the Access Control System***

Staff and visitors will be issued with uniquely identifiable access cards; staff cards and anyone with Area 3 clearance or above must have an access card with their photograph for visual identification. Visitors who have been given security clearance are issued with access cards after they have signed in. These access cards are returned when the visitors sign out on leaving the building.

In order to enter a secure area (i.e. corridors A, B, or C) an access card must be passed near the card reader situated at the door. When the card has been read at a door, the access control system determines the security clearance

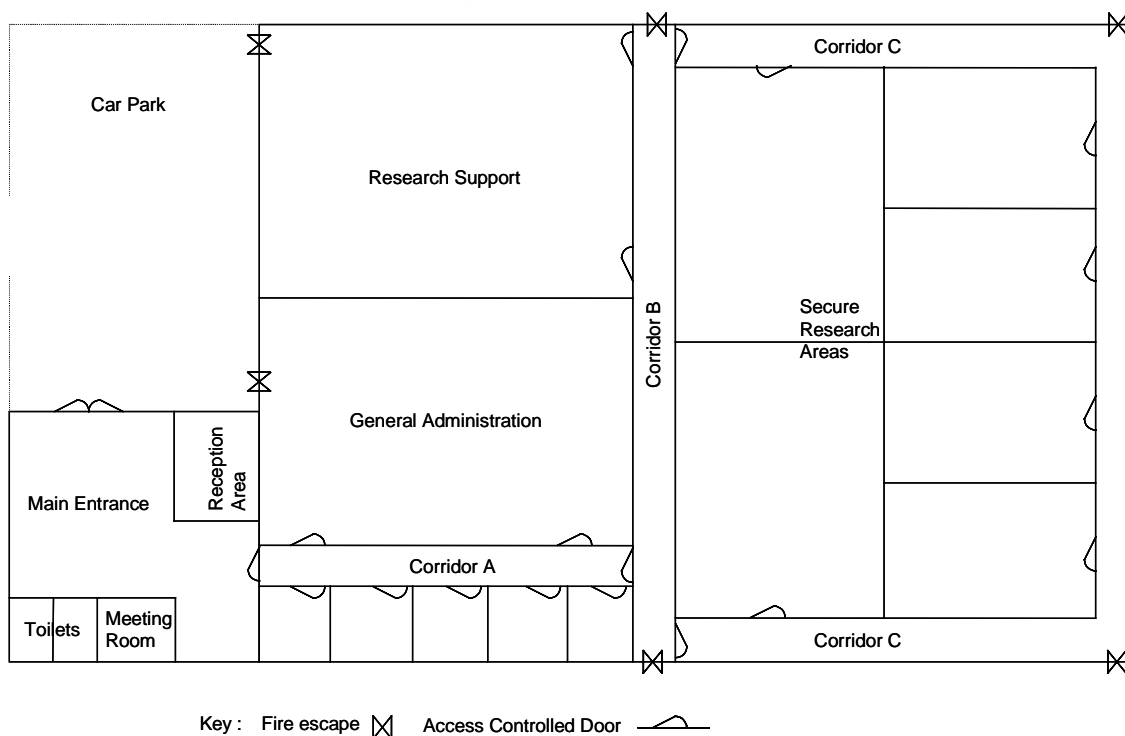
of the cardholder and, if appropriate, permits the door to be opened. When the cardholder has passed through the door, or if the door is not used within 10 seconds, the access control system locks the door again. If the cardholder does not have the appropriate security clearance, a message is displayed upon a terminal in the reception area indicating that unauthorized access has been attempted. Access to the offices and laboratories is also controlled and each door also has a card-reader.

On occasions, the access cards may not be readable by the card-readers. If a card-reader is unable to read a card, a message is displayed upon a workstation in the reception area so that appropriate action can be taken. It is intended to interface the access control system to the fire alarm system. If a fire is detected, the fire alarm system will send details of the primary location of the fire to the access control system, which will then deactivate the door controls so that personnel may move without restrictions through the doors and out of the building.

### ***Reporting Requirements for the New Security Systems***

All data regarding an individual's accesses to the building should be available interactively through appropriate query dialogues. In addition to this the access control system should be able to produce the following reports.

1. Building Access Report detailing for all individuals in the building at a specified time and date the name, company, date authorization was given, category, security clearance and period of security clearance. Each employee's department and grade should also appear on the report.
2. Access history for any individual detailing their accesses to the building and the door used (with times and dates).
3. In order to comply with the legal requirements a series of reports on employees and visitors listing all the details recorded about them.



**Figure 1** Floor layout of Technology Research